



## **Operators Manual P5 Pneumatic Underpinner**



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### **P5 Technical Specification**

Moulding Width (Using Rebate Clamp)	0-70mm
Moulding Width (Without Clamp)	0-110mm
Moulding Height	0-100mm
Pin Placement from Back Corner	0-120mm
Wedge Sizes	5 to 15mm
Air Supply Pressure	6 - 8bar (90-115psi)
Underpinner Dimensions (WxDxH)	730mm x 800mm x 1110mm
Weight	60kg
Warranty	1 year

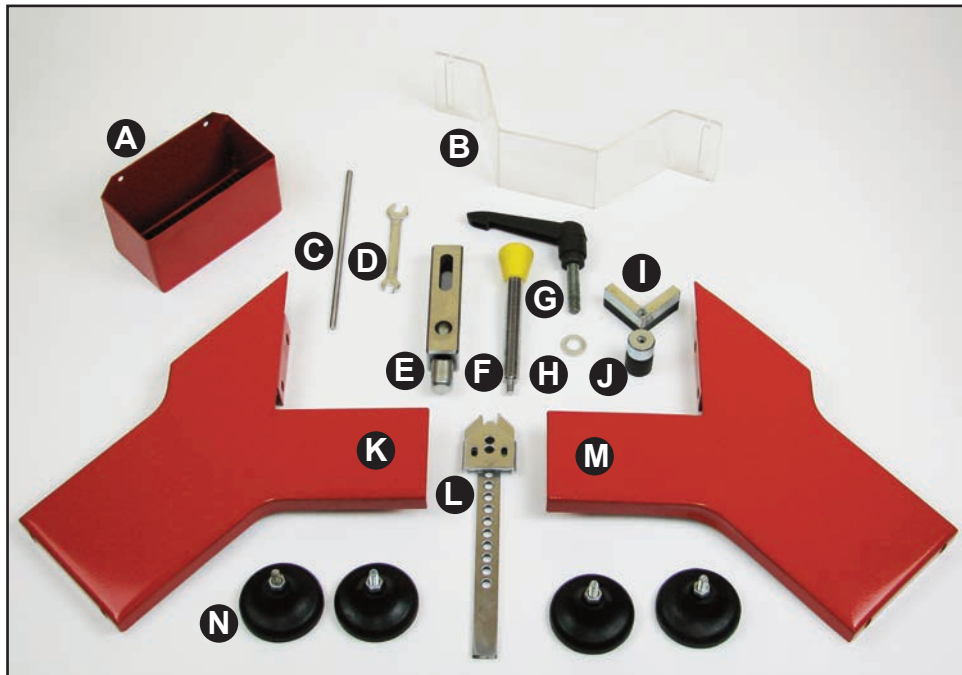
### **GENERAL SAFETY RULES**

**WARNING:** Do not attempt to operate the machine until you have read thoroughly and understood completely all instructions, rules, etc. contained in this manual. Failure to comply may result in accidents involving serious personal injury. Keep this owner's manual and review frequently for continuous safe operation.

1. Know your machine. For your own safety, read the owner's manual carefully. Learn its application and limitations, as well as specific potential hazards pertinent to this machine.
2. Keep guards in place and in working order. If a guard must be removed for maintenance or cleaning, make sure it is properly replaced before using the machine again.
3. Remove adjusting keys and spanners. Form a habit of checking to see that the keys and adjusting spanners are removed from the machine before operating it.
4. Keep your work area clean. Cluttered areas and workbenches increase the chance of an accident.
5. Do not use in dangerous environments. Do not use power tools in damp or wet locations, or expose them to rain. Keep work areas well illuminated.
6. Keep children away. All visitors should be kept a safe distance from the work area.
7. Use the right tools. Do not force the machine or attachments to do a job for which they are not designed. Contact the manufacturer or distributor if there is any question about the machine's suitability for a particular job.
8. Wear proper apparel. Avoid loose clothing, gloves, ties, rings, bracelets, and jewellery which could get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair.
9. Always use safety glasses. Normal spectacles only have impact resistant lenses. They are not safety glasses.
10. Do not over-reach. Keep proper footing and balance at all times.
11. Maintain machine in good condition. Keep machine clean for best and safest performance. Follow instructions for lubrication and maintenance.
12. Disconnect the machine from power or source (or air supply) before servicing.
13. Never leave the machine unattended with the air supply connected.
14. Do not use any power tools while under the effects of drugs, alcohol or medication.

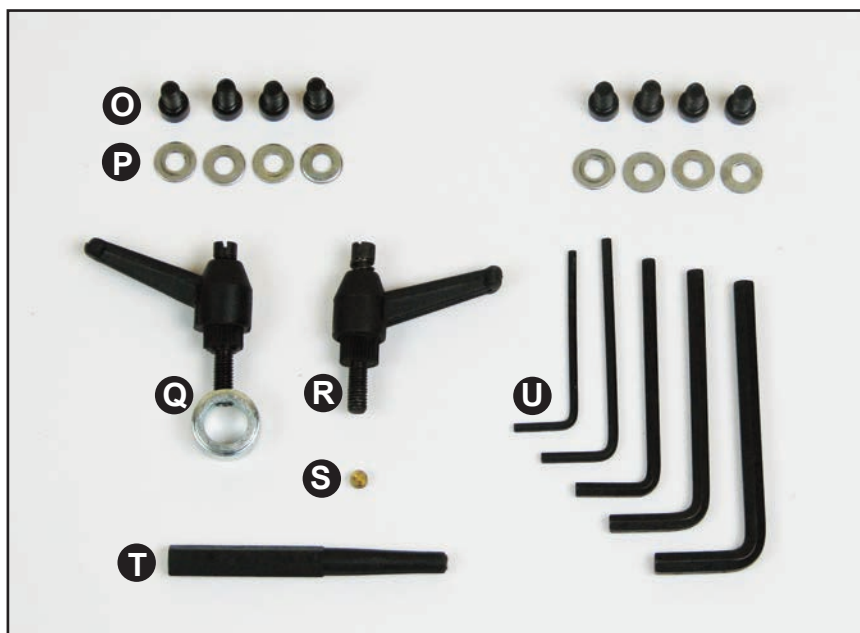
## Unpacking Your Underpinner

Check the contents have arrived safely and all the components are present according to the list below.



### Large Parts

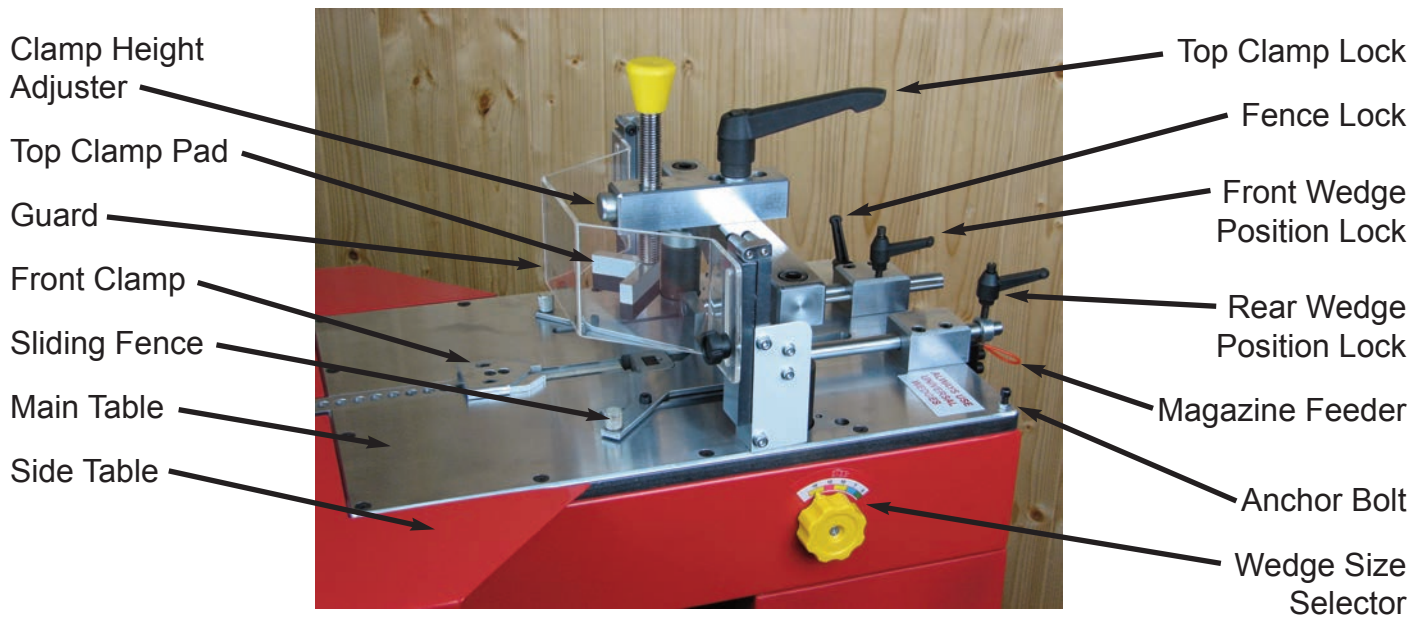
- |                   |                    |
|-------------------|--------------------|
| A) Accessory Tray | H) Washer          |
| B) Safety Guard   | I) L Shaped Pad    |
| C) Front Stop Bar | J) Round Pad       |
| D) Spanner        | K) Left Table      |
| E) Clamp Adjuster | L) Front Clamp     |
| F) Vertical Bar   | M) Right Table     |
| G) Handle         | N) Rubber Feet x 4 |



### Small Parts

- |                      |                    |
|----------------------|--------------------|
| O) Cap Head Bolt x 8 | S) Brass Nipple    |
| P) Washer x 8        | T) Magnetic Tool   |
| Q) Locking Collar    | U) Set of Hex Keys |
| R) Locking Handle    |                    |

## MAIN FEATURES OF THE P5 UNDERPINNER



### ASSEMBLY INSTRUCTIONS

#### **1) Fit the Rubber Feet**

Screw 4 feet (N) into threaded holes in the base of the stand. The feet are adjustable in height. Use a 13mm spanner to tighten the locking nut, once the machine has been levelled.

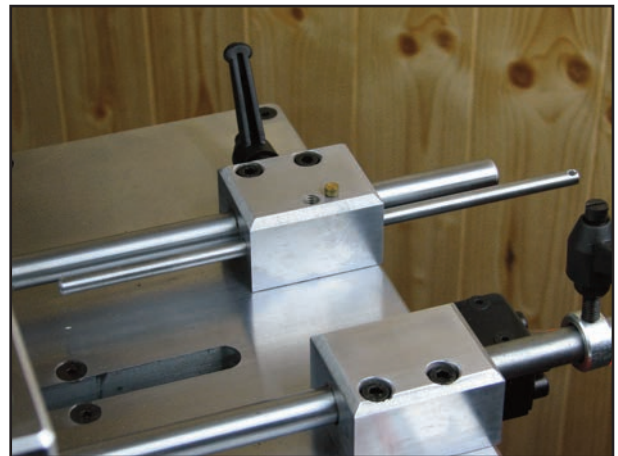


#### **2) Assemble the Fence**

Fit the Handle and Locking Collar (Q) over the right hand fence bar.



Insert the Front Stop Bar (C) into the hole in the fence block.



Place the Brass Nipple (S) into the threaded hole in the fence block.



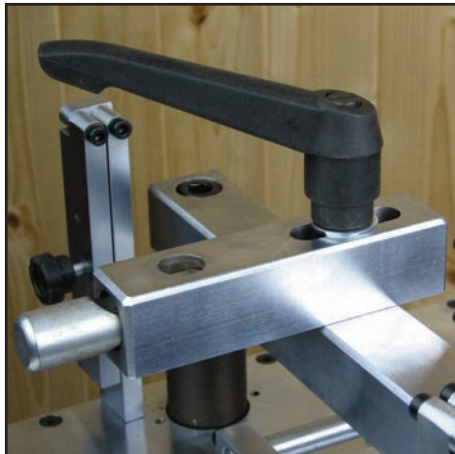


Screw in the Locking Handle (R).



### 3) Assemble the Top Clamp

Fit the Clamp Adjuster (E) onto the bridge and secure in place with Washer (H) and Handle (G).

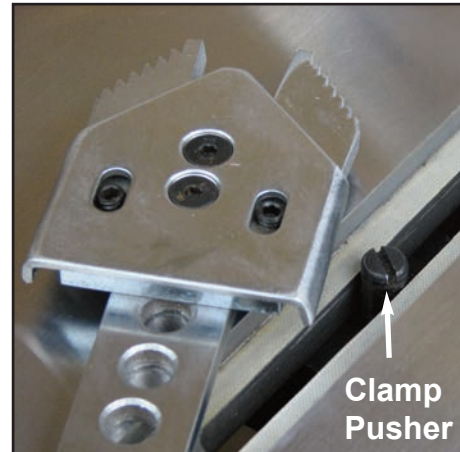


Push the Button on the front of the Clamp Adjuster and insert, from above, the Vertical Bar (F).  
Screw the L Shaped Pad (I) onto the end of the vertical bar.



### 4) Assemble the Front Clamp

Position the Front Clamp (L) so that one of the round holes aligns over the Clamp Pusher.



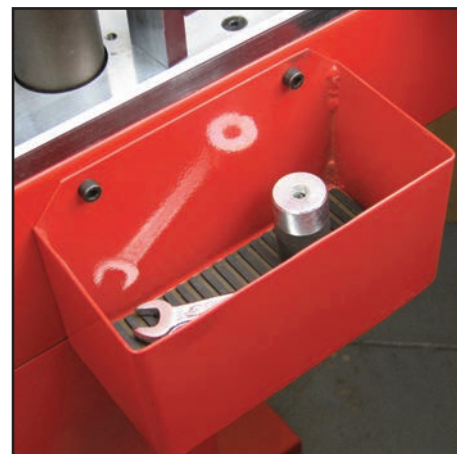
### 5) Assemble the Side Tables

Use 8 Cap Head Bolts (O) and Washers (P) to fit the 2 Side Tables (K&M).  
Use a straight edge to set the level of the tables flush with the main table.



### 6) Fit the accessory tray

Undo the two cap head bolts, located on the left hand side of the body, and use them to secure the Accessory Tray (A).  
Store the service tools and spare wedges here.

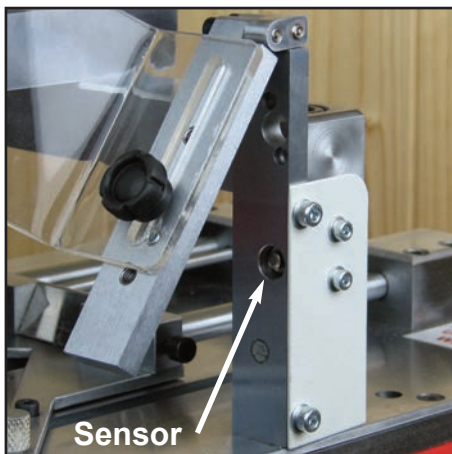


## 7) Fit the guard

Remove the two thumb screws and use them to fit into the slots in the transparent Guard (B). The guard is hinged and lifts up to allow access when making adjustments to the machine.



**Please Note:** The machine will only operate when the guard is closed and magnetically latched against the sensor.



## OPERATING INSTRUCTIONS

**Caution:** Be Aware the Top Bridge of the Pinner will raise sharply as the supply is connected.

### 1) Connect to an Air Supply

This machine requires an air supply of between 6-8bar (90-115psi). Connect a hose using a Framers Corner quick action coupler (C412 - Not supplied). Alternatley you can change the fitting to match the type used in your workshop by simply unscrewing the plug and replacing it with your own. The thread size is 1/4".



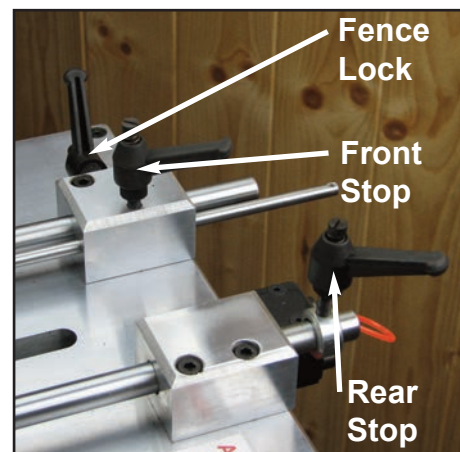
### Adjust the pressure regulator.

The pinner is fitted with a pressure gauge. When an air supply is connected the gauge should read between 6-8bar. (otherwise see trouble shooting guide)

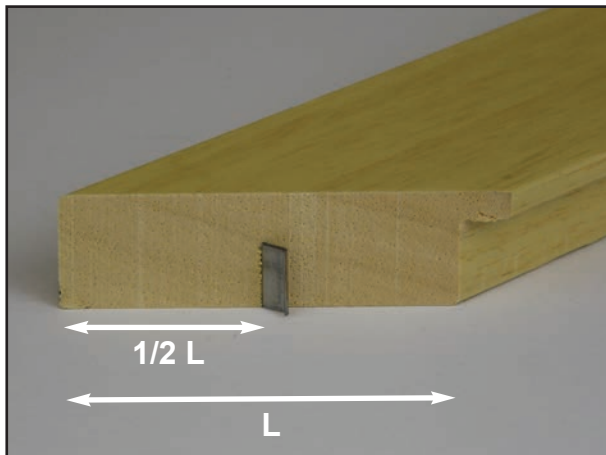
### 2) Set the Fence

The fence will slide smoothly forward and back. This allows wedges to be inserted into any position on the moulding.

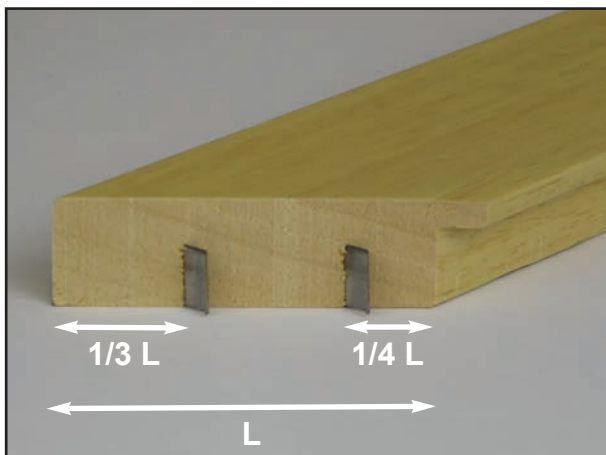
The fence is fitted with a limit stop to set the front wedge position and a limit stop to set the rear wedge position.



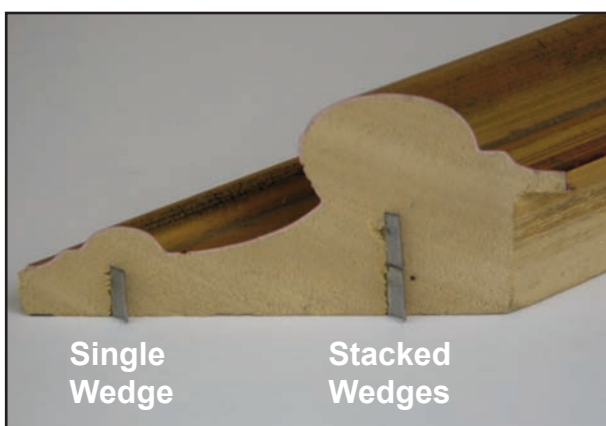
When inserting only one wedge into a corner, the position should be central.



When inserting 2 or more wedges into a corner the first position should be  $1/4$  distance from the front edge. The last position should be  $1/3$ rd distance from the back edge.



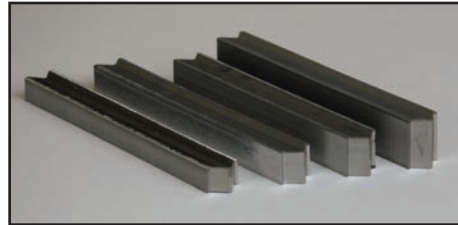
There is also a lock to hold the current position. This is used when 'stacking' wedges. Stacking is the process of inserting multiple wedges in the same position. The second, and subsequent wedges, will drive the first wedge deeper creating a stack. Using this method 2 x 10mm high wedges will become a 20mm high wedge.



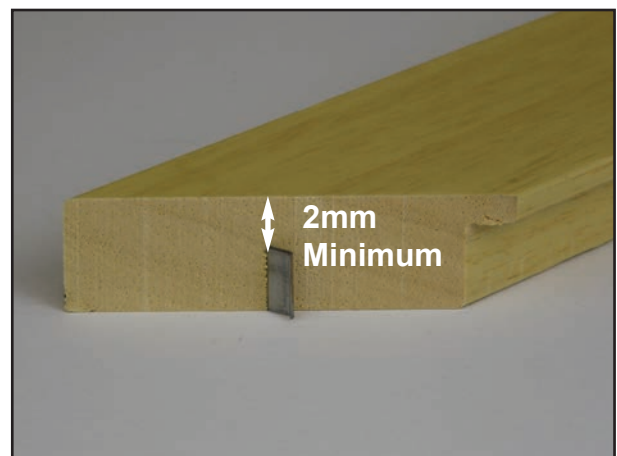
### 3) Select the Appropriate Sized Wedge

The P5 can use wedge (V-nail) sizes 5mm, 7mm, 10mm, 12mm and 15mm.

**Please Note:** Only use **Universal type** wedges supplied in glued strips



There must be a minimum of 2mm between the top of the inserted wedge and the face of the moulding.



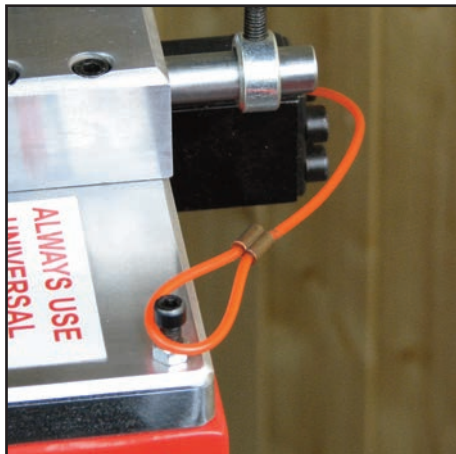
### 4) Load the Magazine

Adjust the wedge selector located on the right hand side of the machine to match the size of wedge to be used.





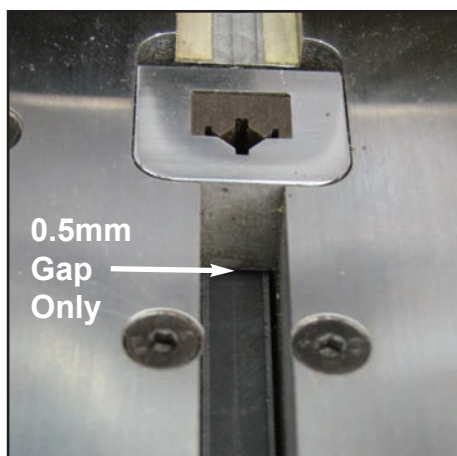
Pull back the nylon cord and hook the looped end over the anchor bolt.



Insert a strip of wedges, sharpened side upwards. When using genuine Framers Corner Wedges, insert with glued side up.

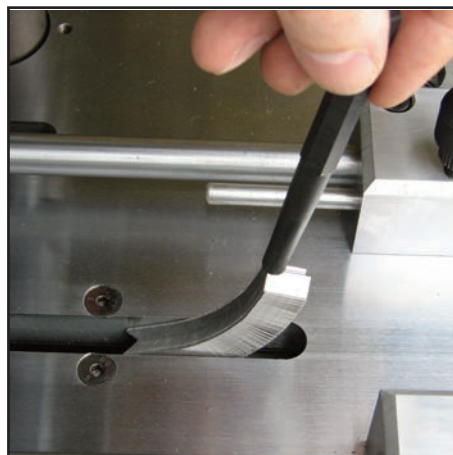


Unhook the nylon cord and gently let the spring push the strip of wedges into the magazine. Use visual observation to confirm that the wedges slide under the cover plate with a gap of no more than 0.5mm.



To remove wedges from the magazine, reverse the procedure.

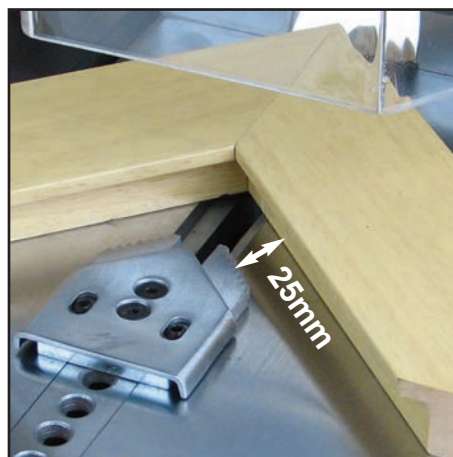
Use the Magnetic Tool (T) to pull the partly used strip of wedges, out of the magazine.



### 5) Set the Front Clamp

The front clamp grips the moulding by the rebate. The clamp holds the moulding securely even when moving from one wedge position to another. Place a piece of the moulding to be used against the fence. Press and hold down the right hand foot pedal. The clamp pusher will travel backwards.

Fit the clamp over the clamp pusher, in such a way that tip of the clamp is within 25mm of the moulding.



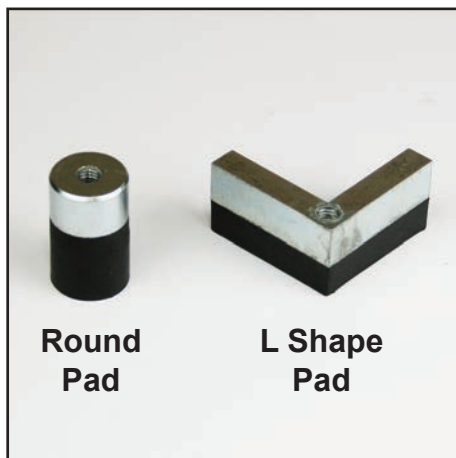
Release the foot pedal and the clamp will move forward, gripping the moulding.

The tip of the clamp is designed to allow for slight variations in the moulding width.



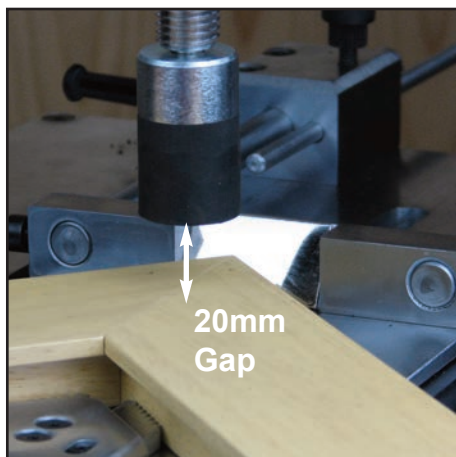
## 6) Choose the Appropriate Rubber Pad

The pinner is supplied with 2 rubber pads. For flat moulding the round pad is generally better. For profiled moulding with varying heights the L shaped pad is generally better.



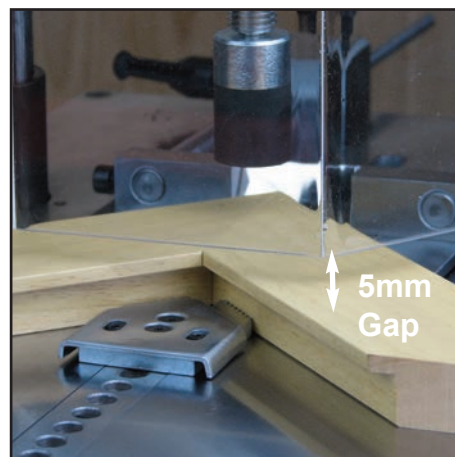
## 7) Set the Top Clamp

It is important to set the height of the top clamp correctly. Place the moulding to be used against the fence. Set the gap between the lowest point of the moulding and the underside of the rubber pad to 20mm. The maximum travel of the clamp is 30mm. To adjust the height press the button and slide the clamp up or down.

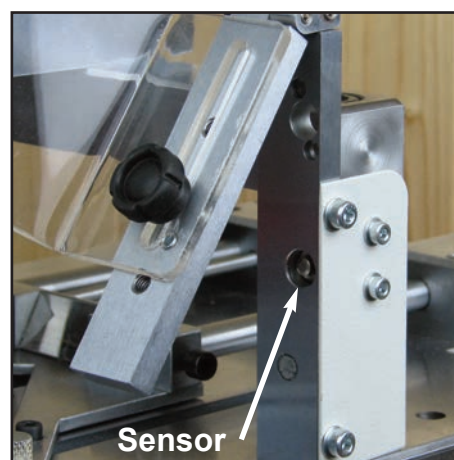


## 8) Set the Guard

The purpose of the transparent guard is to ensure the operators hands are well away from the danger area and to prevent accidental operation of the machine. The height of the guard should be set within 5mm of the highest point of the moulding, and is adjusted using two thumb nuts.



The machine is deactivated until the guard is lowered into position and magnetically locked against the sensor switch.



## 9) Positioning the Foot Pedal

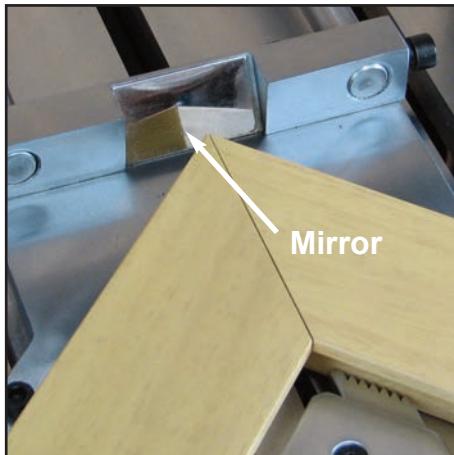
The foot pedal can be used on the left or right hand side of the machine. when working with very large frames, it may be more convenient to work from behind the machine with the pedal turned round.



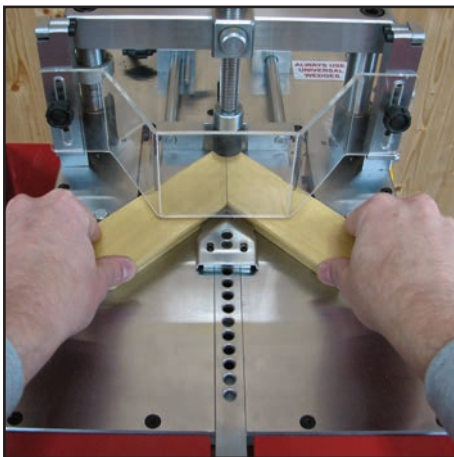
## 10) Insert the Wedge

With all the above settings made:

- Push the fence into the back position
- Press down the right hand pedal
- Place 2 mitred pieces against the fence
- Release the pedal
- Use the inspection mirror to check the joint



- Press and hold the left hand pedal



During the cycle the top clamp will travel down and contact the moulding, then the driver will push one wedge into the underside of the moulding.

- Release the pedal

If more than 1 wedge is to be inserted into the corner, wait for the cycle to finish, pull the fence and moulding into the front position and press the pedal again.

**Please note:** It is recommended that a wood glue is always used when making a frame. Apply a small amount of glue to one of the mitred ends before loading into the pinner. The glue will give the frame strength and ensure it lasts for many years.

## ROUTINE MAINTENANCE

**Caution: Always disconnect the air supply before starting any maintenance**

### 1) Cleaning

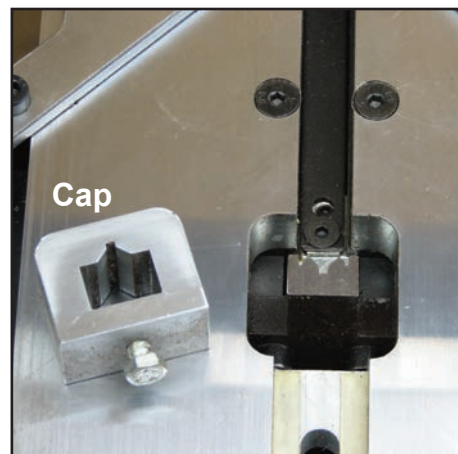
Clean any excess wood glue from around the wedge exit point.

Clean the top of the table using a silicone spray or similar product to allow the fence to slide smoothly.

### 2) Clearing a blockage

Occasionally, a wedge may get jammed in the magazine. It may be possible to pull the wedges out by hand. If it is firmly stuck, possibly half in and half out, It is highly likely that the driver will also be stuck in the raised position.

To clear the blockage, use an 8mm spanner to remove the Cap.



Once removed, the driver should drop back down and the jammed wedge can easily be removed.

When refitting the cap, ensure the top is flush with the surface of the surrounding table.

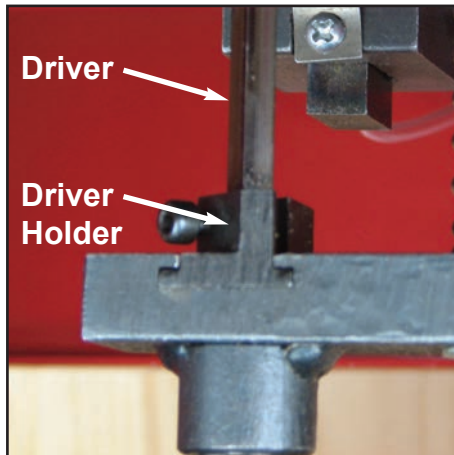
### 3) Replacing the Driver

The driver is the part which takes the most wear and will, one day, need replacing.

- i) Disconnect the air supply.
- ii) Use an 8mm spanner to remove the Cap.
- iii) Undo the hex bolt which secures the bottom of the driver to the driver holder.
- iv) Push the driver up through the main table and remove it from the top.



When fitting the new driver ensure the V shape lip is uppermost, with the point of the V towards the back of the machine.



Before tightening the hex nut, ensure the driver is firmly pressed against the bottom of the holder.

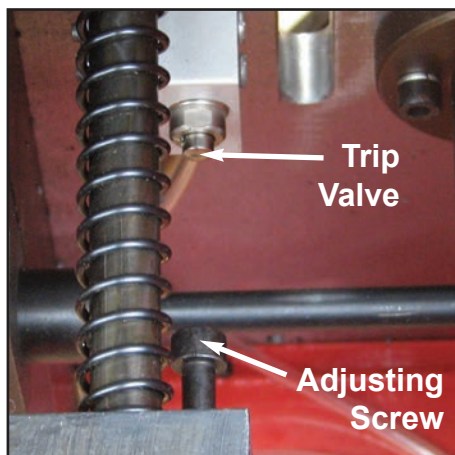
### **EXTRA MAINTENANCE**

**Warning:** The following procedures should only be attempted by competent people or when directed to by the manufacturer or retailer.

#### **1) Setting the Driver Height**

The upper travel limit of the driver can be adjusted when required.

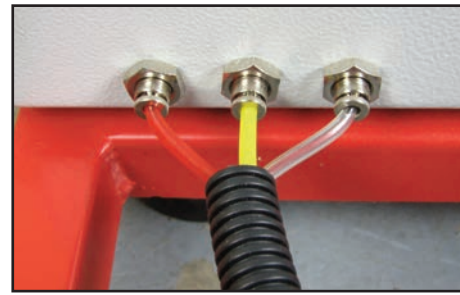
The adjusting screw which contacts the trip valve, can be adjusted up or down accordingly.



#### **2) Replacing the Pedal**

In the event the foot pedal unit needs replacing, There are 3 air lines to disconnect.

Left connection - Red  
Centre Connection - Yellow  
Right Connection - Clear (White)



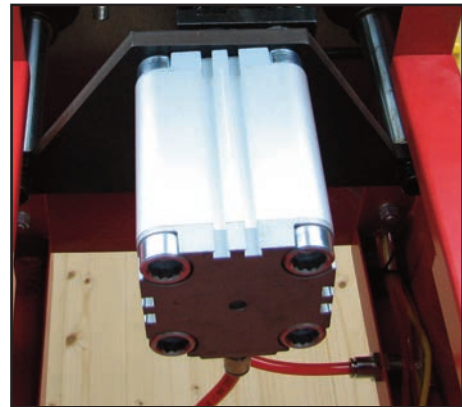
#### **3) Front Clamp Cylinder**

The cylinder can be replaced when required.



#### **4) Main Cylinder**

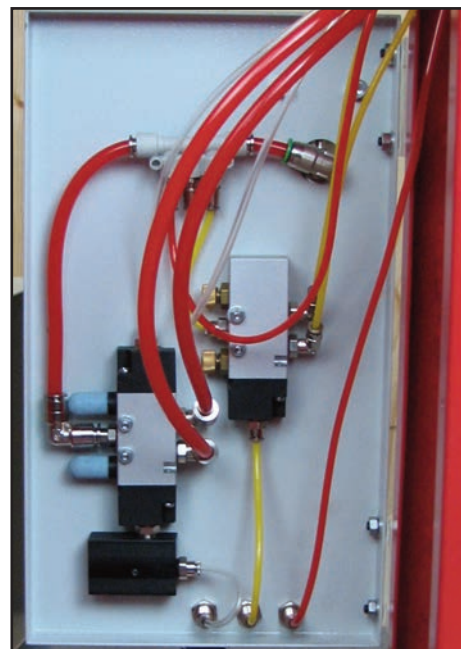
The cylinder can be replaced when required.



#### **5) Servicing the Control Panel**

The panel with all the pneumatic components is located on a hinged panel.

Remove the hex locking key to access it.





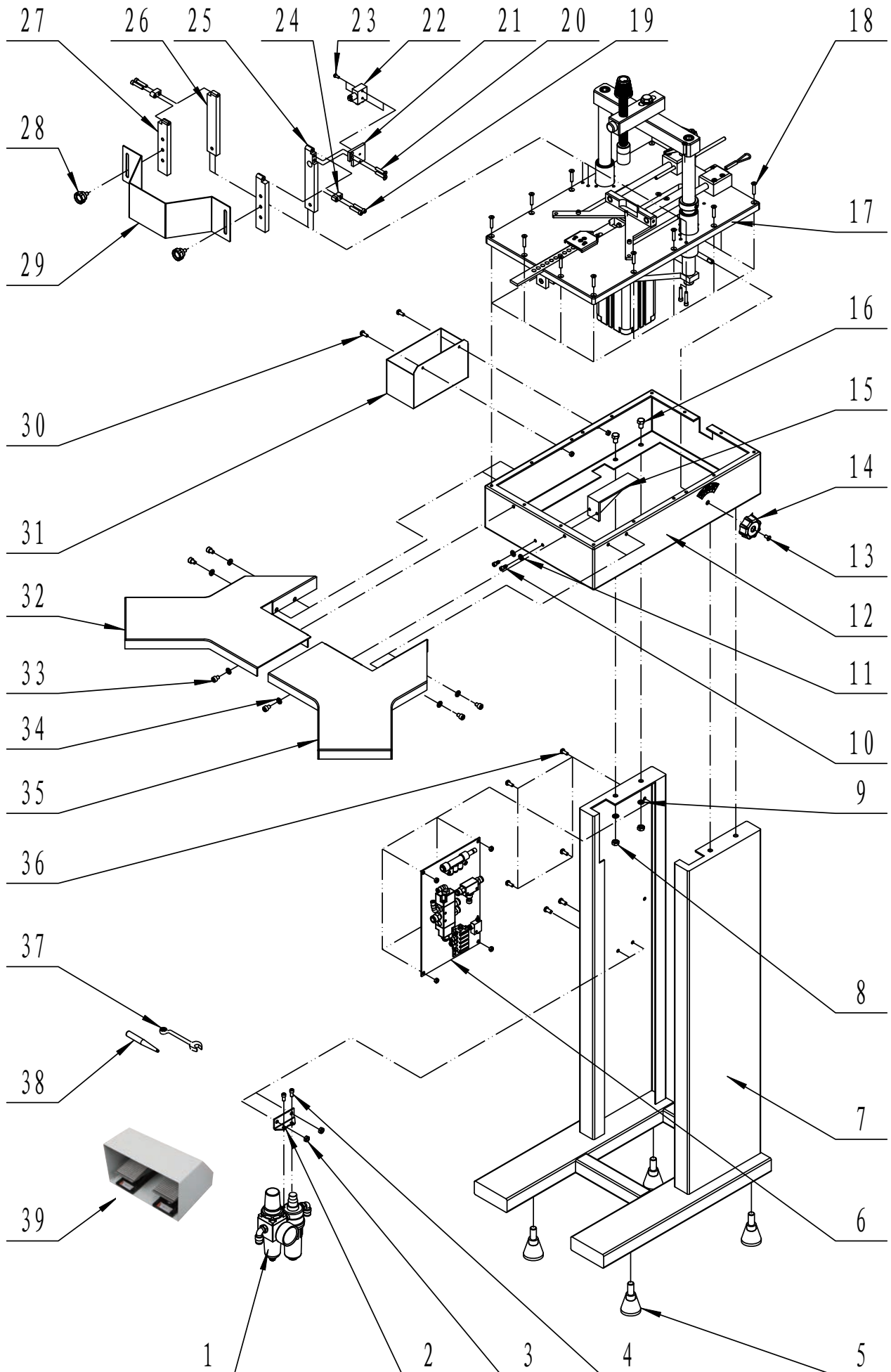
### **UNDERPINNER TROUBLESHOOTING GUIDE**

<b>Fault</b>	<b>Possible Cause</b>	<b>Remedy</b>
Wedges are too wide to load into the magazine	Wrong type of wedges	Only Universal type wedges can be used
	Faulty wedges	Check with wedge supplier
Both footpedals do nothing	Air supply is not connected or low pressure	Check pressure guage reads between 6-8 bar
		Turn compressor on & connect airline
	Safety Guard is not closed	Close guard (See page 9)
No wedge is inserted into the moulding	The wedge magazine is empty	Reload the magazine
	Wedge feeder not engaged	Release the nylon cord
	Wedge is jammed in cap	Clear the blockage (see page 10)
Fence does not slide	Build up of dirt	Lubricate the two sliding fence bars (part no. 60)
Pressure regulator outside of range 6-8bar	Air supply not connected	Turn compressor on & connect airline
	Pressure regulator not set correctly	Adjust the regulator by lifting and then turning the top cap. Clockwise increases the pressure, Anticlockwise decreases the pressure.
Top clamp is marking the moulding	Wrong pressure pad fitted	Change to alternate shape pad
	Pressure pad is worn or damaged	Replace pad
	Air pressuse is too high	Use the regulator to lower the air pressure
Bad joint	Bad mitre	Check mitring machine
Moulding is moving during pinning	Cap not flush with table	Remove cap and refit it (see page 10)
	Extension tables not flush with table	Reset the tables
	Top clamp not set correctly	Set gap between moulding and pressure pad to not more than 20mm
	Front clamp not set correctly	Set gap between moulding and clamp to not more than 25mm

### **UNDERPINNER TROUBLESHOOTING GUIDE**

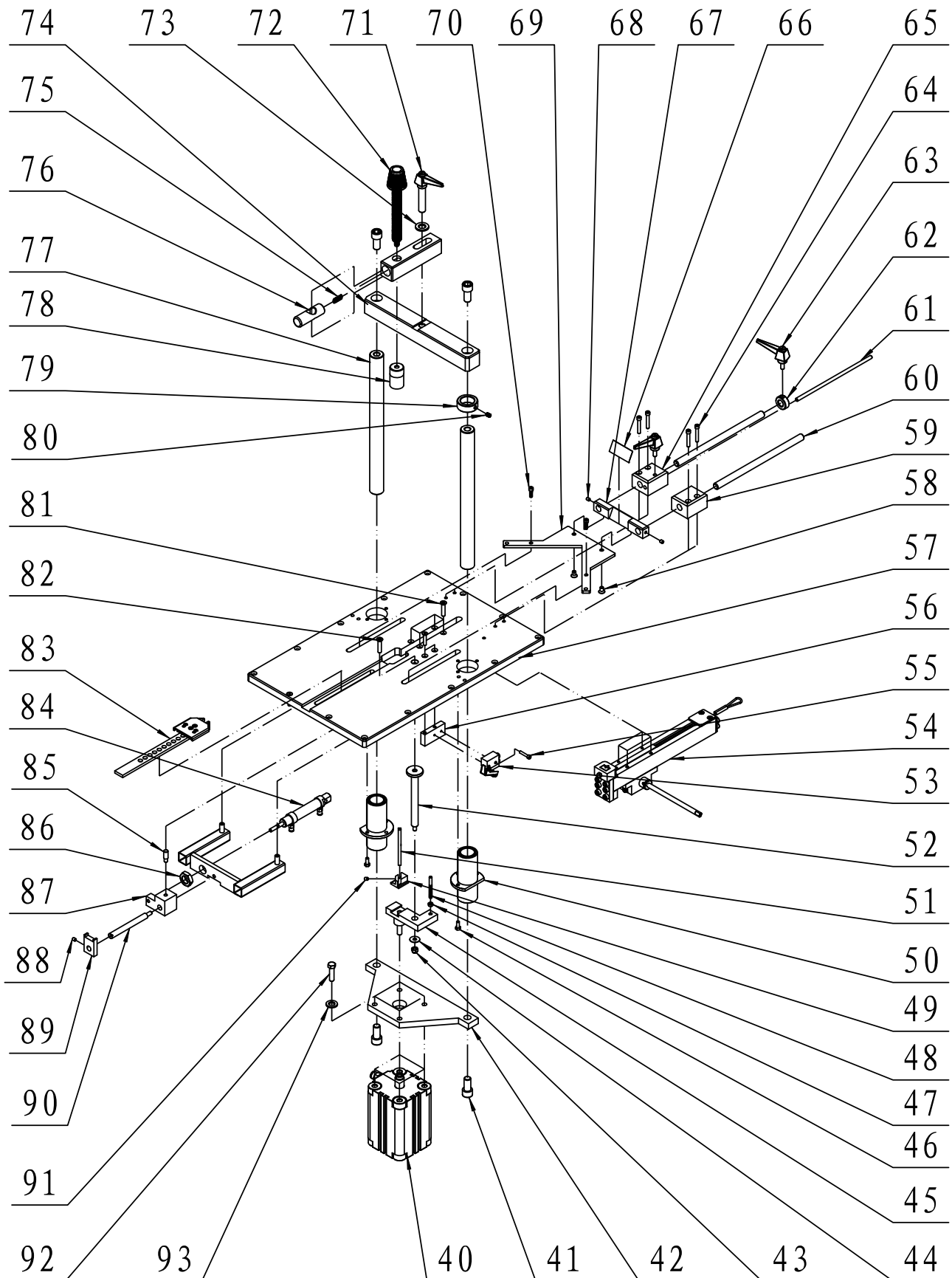
<b>Fault</b>	<b>Possible Cause</b>	<b>Remedy</b>
Wedges jam in cap	Wrong wedge size selected	Measure which size wedges have been loaded and check size selector is set correctly
	Wedges loaded incorrectly	Ensure wedges are loaded sharpened side up
	Excess build up of glue	Remove the cap and clean the mechanism
	The driver is damaged	Replace the driver
Wedges not fully inserted into moulding	Trip valve not set correctly	Reset the adjusting screw (see page 11)
	Top clamp not set correctly	Set gap between moulding and pressure pad to not more than 20mm
	Air supply insufficient	Check airline and pressure
Wedges being driven in too deep	Trip valve not set correctly	Reset the adjusting screw (see page 11)
Attempt at stacking fails	Fence is moving during cycle	Lock the fence when stacking (see page 6)
Stacking wedges break through side of moulding	Stack is too high	Use less or smaller size wedges
	Wedge position too close to edge	Move the wedge position away from the edge
	Wavy grain wood (particularly hardwood)	The wood species is not suitable for stacking
Wedge deforms when inserted	Hardwood	Use specific hardwood wedges
Driver does not return after cycle	Driver has come out of holder	Refit the driver into the holder (see page 11)
Top clamp does not return to start position	Top clamp not set correctly	Set gap between moulding and pressure pad to not more than 20mm
	Return Collar (part no. 79) has moved	With Extreme Caution: Use a tool to manually activate the trip switch. Now reset the return collar with 30mm between collar and bush housing (part no.50)
	Trip valve not set correctly	Reset the adjusting screw (see page 11)

# **P5 Parts Drawing 1**

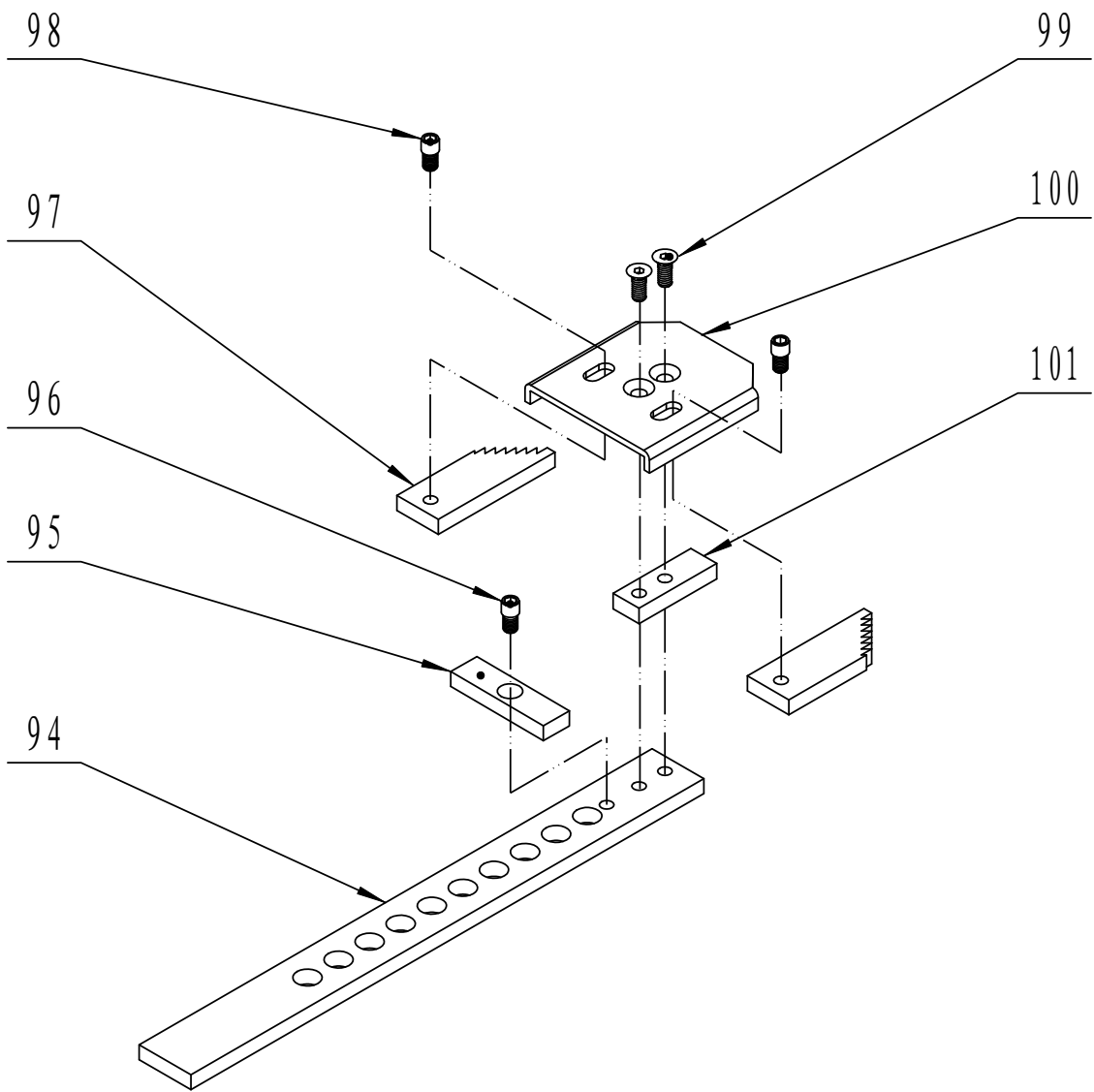




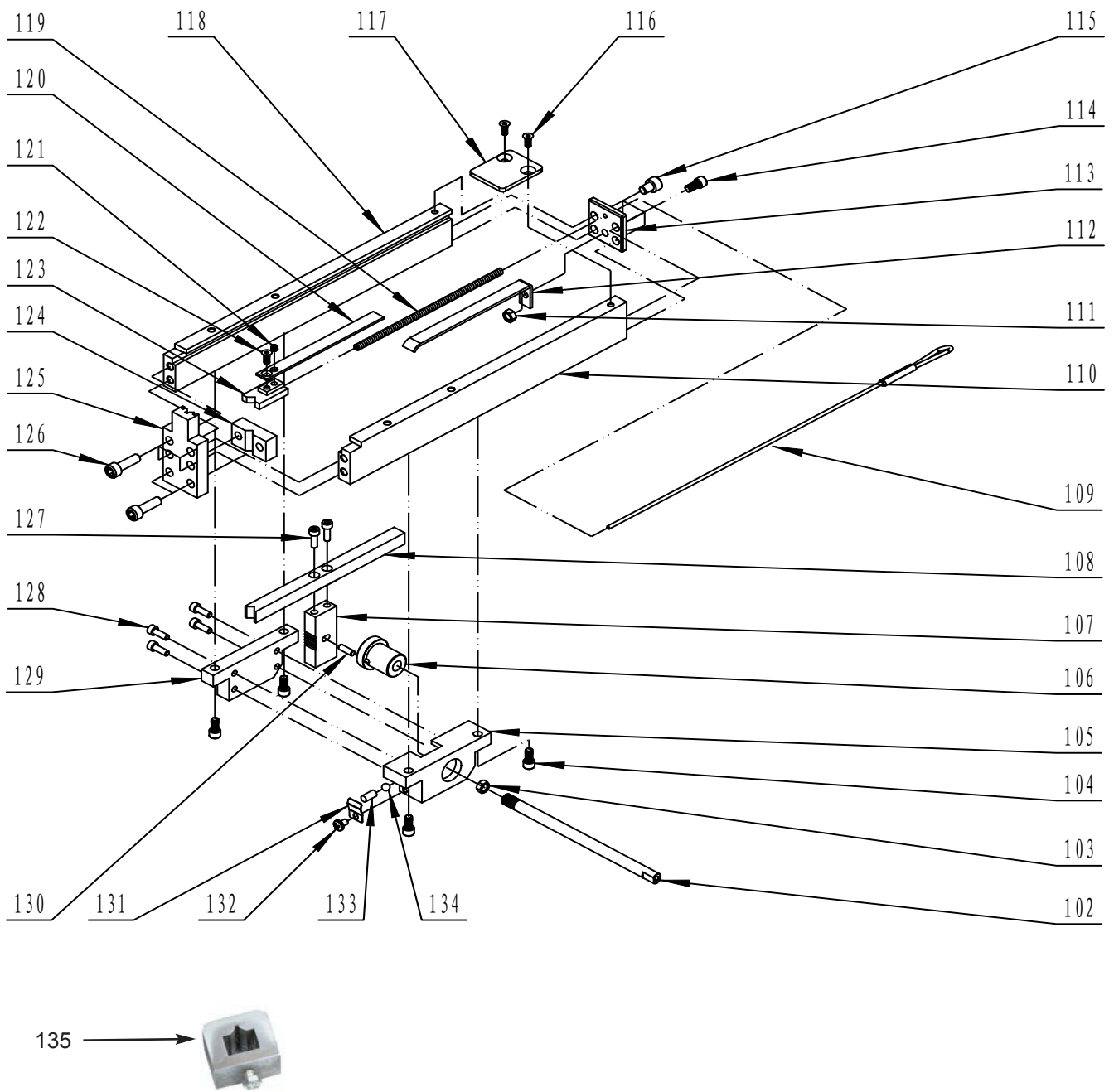
## P5 Parts Drawing 2



**P5 Parts Drawing 3**



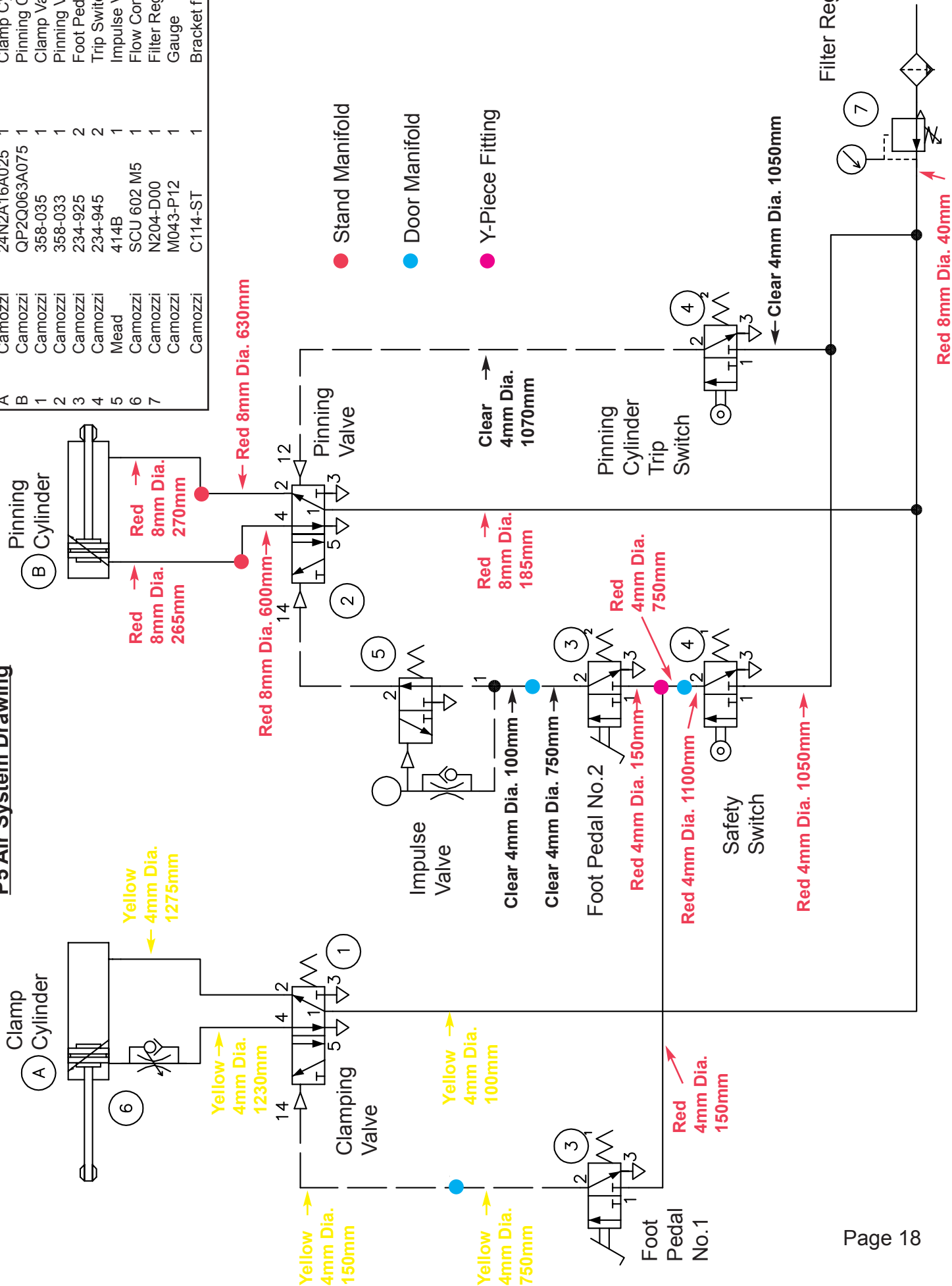
# P5 Parts Drawing 4





P5 Air System Drawing

Code	Manufacturer	Part No	Qty	Description
A	Camozzi	24N2A16A025	1	Clamp Cylinder
B	Camozzi	QP2Q063A075	1	Pinning Cylinder
1	Camozzi	358-035	1	Clamp Valve
2	Camozzi	358-033	1	Pinning Valve
3	Camozzi	234-925	2	Foot Pedals
4	Camozzi	234-945	2	Trip Switch & Safety Switch
5	Mead	414B	1	Impulse Valve
6	Camozzi	SCU 602 M5	1	Flow Control Valve
7	Camozzi	N204-D00	1	Filter Regulator
	Camozzi	M043-P12	1	Gauge
	Camozzi	C114-ST	1	Bracket fro Regulator



## **P5 Underpinner Parts List**

<b>Part No.</b>	<b>Part Description</b>	<b>Part No.</b>	<b>Part Description</b>
01	Pressure Regulator N204-D00	49	Driver Holder
02	Mounting Bracket	50	Guide Bush Housing x 2
03	Nuts x 2	51	Driver
04	Socket Head Screws x 2	52	Guide for Driver Plate
05	Rubber Feet x 4	53	3/2 NC 4mm Trip Valve 234-945
06	Control Panel	54	Magazine Assembly
07	Floorstand	55	Socket Head Screws x 2
08	Nut x 4	56	Bracket for Trip Valve
09	Washer x 4	57	Main Table
10	Socket Head Screws x 2	58	Countersunk Screws x 2
11	Washers x 2	59	Right Hand Fence Block
12	Main Body	60	Fence Bars x 2
13	Screw	61	Front Stop Bar
14	Wedge Height Selector	62	Rear Locking Collar
15	Clamp Support	63	Rear Locking Handle
16	Socket Head Screws x 4	64	Socket Head Screws x 4
17	Main Table	65	Left Hand Fence Block
18	Socket Head Screw x 10	66	Mirror Plate
19	Socket Head Screws x 4	67	Fence Bracket
20	Socket Head Screws x 2	68	Grub Screws x 2
21	Bracket for Sensor Valve	69	Fence Plate
22	3/2 NC 4mm Sensor Valve 234-945	70	Socket Head Screws x 2
23	Socket Head Screws x 2	71	Adjustable Handle
24	Pivot Block x 2	72	Vertical Bar
25	Left Hand Pillar	73	Washer
26	Right Hand Pillar	74	Top Pressure Bridge
27	Safety Guard Bracket x 2	75	Spring
28	Knob x 2	76	Clamp Adjuster
29	Safety Guard	77	Vertical Bars x 2
30	Socket Head Screws x 2	78	Round Pressure Pad
31	Tool Tray	78A	L Shaped Pressure Pad
32	Left Hand Extension Table	79	Return Collar
33	Socket Head Screws x 8	80	Grubscrew
34	Washers x 8	81	Countersunk Screw x 2
35	Right Hand Extension Table	82	Countersunk Screw x 2
36	Socket Head Screws x 4	83	Front Clamp Assembly
37	Spanner	84	Clamp Cylinder (16 x 25) 24N2A16A025
38	Magnetic Tool	85	Clamp Pusher
39	Footpedal Case	86	Cylinder Locking Nut
39A	3/2 Foot Valve 234-925 x 2	87	Front Clamp Block
40	Main Cylinder (63 x 75) QP2A063A075	88	Grub Screw
41	Socket Head Screws x 2	89	Front Clamp Steady
42	Cylinder Mounting Plate	90	Front Clamp Steady Bar
43	Nut	91	Grubscrew
44	Washer	92	Socket Head Screw x 4
45	Driver Plate	93	Washer x 4
46	Socket Head Screws x 6	94	Front Clamp Bar
47	Nut	95	Jaw Pivot
48	Wedge Height Adjusting Screw	96	M6 Socket Head Screw

## **P5 Underpinner Parts List**

<b>Part No.</b>	<b>Part Description</b>
97	Jaws x 2
98	M4 Socket Head Screws x 2
99	M4 Countersunk Screws x 2
100	Jaw Cover
101	Centre Piece for Jaw
102	Adjuster Shaft
103	Nut
104	Socket Head Screws x 4
105	Right Hand Housing
106	Pinion
107	Rack
108	Wedge Platform
109	Magazine Cord
110	Right Hand Magazine Side
111	Nut
112	Rear Spring Cover
113	End Plate
114	Socket Head Screw
115	Socket Head Screws x 4
116	Countersunk Screws x 2
117	Top Plate
118	Left Hand Magazine Slide
119	Spring
120	Front Spring Cover
121	Countersunk Screw
122	Countersunk Screw
123	Wedge Feeder
124	Driver Support
125	Nosepiece
126	Socket Head Screws x 6
127	Socket Head Screws x 2
128	Socket Head Screws x 4
129	Left Hand Housing
130	Drive Pin
131	End Spring
132	Socket Head Screw
133	Pin
134	Ball Bearing
135	Cap

### **Pneumatic System**

Page 18 shows the air components along with the hose cutting list. The hoses are colour coded to enable the diagram to be followed more easily.

The part numbers we use for the air components are from the Italian manufacturer Camozzi. These parts can be obtained anywhere in the world from the local Camozzi distributor.

A list of their international distributors can be found on their website [www.camozzi.com](http://www.camozzi.com)

One component is from US manufacturer Mead. Their list of distributors can be found on their website [www.mead-usa.com](http://www.mead-usa.com)

### **CE Declaration**

We declare that Pneumatic Underpinner, Model P5 conforms with the following directives:

Machinery Directive 2006/42/EC

And further conforms with the following EU harmonized standard;

EN ISO 12100:2010

EN ISO 4414:2010

The equipment named above has been tested and found to comply with the relevant sections of the above referenced specifications. The machinery complies with all essential requirements of the directive.

A copy of the declaration is available by contacting framers corner.

